SN140 ROGOWSKI COIL

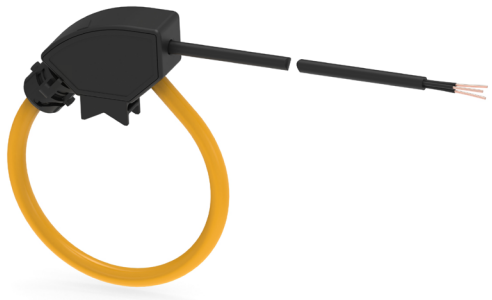
Ø7 MM FLEXIBLE ROGOWSKI COIL

INTRODUCTION

SN140 is a flexible current transducer based on Rogowski principle, particularly suitable for measurement in combination with devices. SN140 coils are available in different sizes and can be supplied according to customer's design, therefore they can be used in all those applications, in which traditional transducers are not fitting due to its size and/or weight.
The SN140 is offered as an all-in-one solution with a built-in integrator. This eliminates the need for any external conditioning equipment, simplifying installation and delivering significant space and cost savings. Users benefit from a compact, single-unit system that provides the required 90° phase compensation and frequency equalization.
Due to its specific features, flexible Rogowski coil is an extremely comfortable solution for current measurement and can be used in a number of cases where traditional current transducer is not the adequate solution.
SN140 coil is provided with a shield against the influence of external magnetic fields, therefore it grants a stable measurement from low currents to several kA.
The particular features of the Rogowski coils combined with the extremely flexible input programming of our meters, allow to carry out measurement by all applications.
SN140 series features an integrated fixing mechanism for simple and secure, direct-to-conductor mounting

FEATURES

- Suitable for measuring currents up to several kA
- High linearity
- Very useful with large size or awkward shaped conductors or in places with limited access
- Not damaged by overloads
- Non-intrusive, no power drawn from the main
- Thanks to its lightweight, it can be changed on the measured conductor
- Totally shielded
- Outdoor use on request
- UL 2808 certified
- Integrated Fixing Kit for quick and secure installation
- Delivered already calibrated
- Very thin coil diameter: down to 7 mm
- Provided with an accessory to secure the coil to the busbar
- Measurement uniformity at any position of the conductor inside the coil
- Excellent degree of rejection to the external current conductor
- Possibility to seal the locking of the coil



APPLICATIONS

- Measuring devices, lab instrumentation
- Power monitoring & control systems
- DC ripple measurement
- Harmonics and transients monitoring
- Very high current monitoring

APPROVALS

- Approval under multiple listing process

BENEFITS

- Due to its structure, flexible Rogowski coil allows to embrace conductors or grouped cables, which are large and difficult to reach, without any hazard.
- The coil output gives a low voltage signal, therefore there is no danger from open-circuited secondary. This makes Rogowski transducers extremely suitable for temporary measurements, for example in combination with analysers.
- Unlike a traditional current transformer with magnetic core, the Rogowski coil is a non-intrusive transducer. Since it has no hard core, it draws no power from the main circuit carrying the current to be measured.
- The absence of magnetic core grants a wide frequency response. This makes SN140 particularly suitable for measurement of harmonic content and transients.

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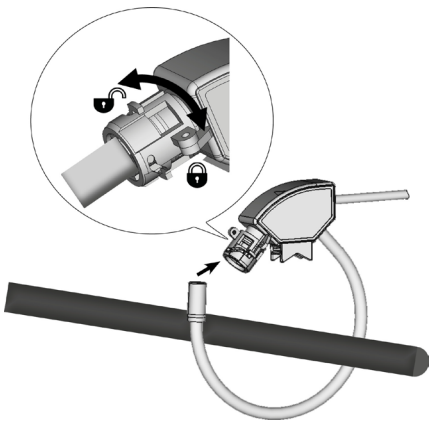
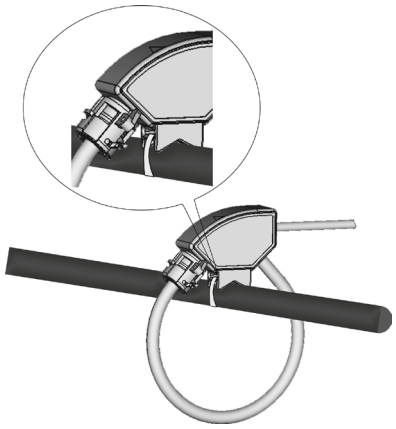
Ø7 mm Flexible Rogowski Coil

SPECIFICATIONS

Coil	
Coil length	15 ... 40 cm
Sensor internal diameter	4 ... 12 cm
Cord diameter	7.2 ±0.2 mm
Jacket material	Polyphenylene and thermoplastic elastomer
Fastening	Bayonet holder
Weight	150 ... 500 g
Electrical Characteristics	
Nominal output rate	100mV/1kA @ 50Hz
Max measurable current	600 A with 15 ... 28 cm coil length 2500 A with 29 ... 41 cm coil length
Coil resistance	170 ... 500 Ω
Accuracy	Class 0.5-A1 according to IEC 61869-10
Frequency	50/60 Hz
Maximum primary voltage:	600 V CAT IV, Service Entrance
Pollution degree:	2, Controlled Environment for indoor use model 3, Uncontrolled Environment for outdoor use model
Insulation test voltage:	7400 V_{RMS} / 5 s
Connection Cable	
Type	3 x 24 AWG shielded
Length	3 m.
Environmental Conditions	
Protection degree	IP68
Altitude	Up to 2000 m over sea-level
Operating temperature	-35 ... +75°C up to 2500 A with 15 ... 40 cm coil length
Storage temperature	-40 ... +90°C
Relative humidity	0 ... 95%
Installation and use	Controlled Environment for indoor use model

MOUNTING & FIXING





SN140 ROGOWSKI COIL
Ø7 mm Flexible Rogowski Coil

ORDER CODE

Part Description	Coil detail		Cable Detail	Colour	Calibrated
	Length [cm]	Internal diameter [cm]	3 m	Yellow	Yes
SN140 (100mV/1kA @ 50Hz Output Value)					
SN140-15-03	15	~4 (4x5)	•	•	•
SN140-28-03	28	~8	•	•	•
SN140-40-03	40	~12	•	•	•

PRODUCT CODE STRUCTURE

Typical product code
SN140-15-03

Product Series

SN140	Ø7 mm flexible Rogowski coil

Coil Length

15	15 cm
28	28 cm
40	40 cm

Standard Cable Lengths

03	3 m

PRODUCT INFORMATION

Product Description	Output Value (mV)	Coil Length (cm)	Standard Color	Part Number
SN140-15-03	100mV/1kA @ 50Hz	15	Yellow	2548317-1
SN140-28-03	100mV/1kA @ 50Hz	28	Yellow	2548319-1
SN140-40-03	100mV/1kA @ 50Hz	40	Yellow	2548320-1

What is a Rogowski coil?

Rogowski coils have been used for the detection and measurement of electric currents for decades. They are based on a simple principle: an “air-cored” coil is placed around the conductor in a toroidal fashion and the magnetic field produced by the current induces a voltage in the coil. The voltage output is proportional to the rate of change of current. This voltage is integrated, thus producing an output proportional to the current.

By using precision winding techniques, especially developed for the purpose, the coils are manufactured so that their output is not influenced by the position of the conductor within the toroid, and to reject interference from external magnetic fields caused, for example, from nearby conductors. Basically, a Rogowski coil current measuring system consists of a combination of a coil and conditioning electronics. Rogowski coil current transducers are used for the AC measurement.

They can be used in similar circumstances to current transformers but for many applications they have considerable advantages:

- Wide dynamic range, the same coil can be used to measure currents up to several kA.
- High linearity. According to the manufacturing (size, inductance value, ...) the maximum measurable frequency can range up to several kHz.
- Unlike traditional current transducers, there is no danger from open-circuited secondaries.
- They cannot be damaged by large overloads, are non-intrusive, draw no power from the main circuit carrying the current to be measured.

The transducer does not measure direct currents but, unlike a current transformer, it can carry out accurate measurements of AC component even if there is a large superimposed DC component. This feature is particularly useful for measuring ripple currents for example in battery charging systems.

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